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8/19/03

Practitioner's Docket No. 49794 (70904)

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: J. Akiyama, et al.
Application No.: 09/560,522 Group No.: 2653
Filed: April 28, 2000 Examiner: Vuong, Bach Q.
For: OPTICAL DISK, OPTICAL REPRODUCTION DEVICE, AND OPTICAL
RECORDING DEVICE

Mail Stop: Official Draftsperson
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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TRANSMITTAL OF FORMAL DRAWINGS

In response to the NOTICE OF INFORMAL DRAWINGS mailed on June 5, 2003.
date

attached please find:

(a) the formal drawing(s) for this application.

Number of Sheets 8

NOTE: "Identifying indicia, if provided, should include the application number or the title of the invention, inventor's name,

CERTIFICATE OF MAILING (37 C.F.R. SECTION 1.8(a))

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Kathryn A. Grindrod

(type or print name of person mailing paper)

Date: July 28, 2003

Kathryn A. Grindrod

Signature of person mailing paper

WARNING: "Facsimile transmissions are not permitted and if submitted will not be accorded a date of receipt" for "(4) Drawings submitted under sections 1.81, 1.83 through 1.85, 1.152, 1.165, 1.174, 1.437...." 37 C.F.R. section 1.6(d)(4).

docket number (if any), and the name and telephone number of a person to call if the Office is unable to match the drawings to the proper application. This information should be placed on the back of each sheet of drawings a minimum distance of 1.5 cm. (5/8 inch) down from the top of the page. In addition, a reference to the application number, or, if an application number has not been assigned, the inventor's name, may be included in the left-hand corner, provided that the reference appears within 1.5 cm (9/16 inch) from the top of the sheet" (37 C. F. R. Section 1.84(c)).

[X] Each sheet of drawing indicates the identifying indicia suggested in section 1.84(c) on the reverse side of the drawing.

(b) a copy of the NOTICE OF INFORMAL DRAWINGS.

Date: July 28, 2003

David A. Tucker
SIGNATURE OF PRACTITIONER

Reg. No. 27,840

David A. Tucker
(type or print name of practitioner)
Attorney for Applicant

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/560,522	04/28/2000	Jun Akiyama	49794(904)	3377

21874 7590 06/05/2003
EDWARDS & ANGELL, LLP
P.O. BOX 9169
BOSTON, MA 02209

EXAMINER

VUONG, BACH Q

ART UNIT	PAPER NUMBER
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2653

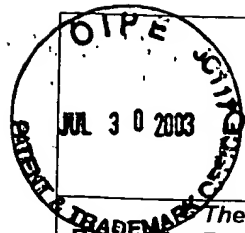
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Office Action Summary

Application No.

09/560,522

Applicant(s)

AKIYAMA ET AL.

Examiner

Bach Q Vuong

Art Unit

2653

The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

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Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Drawings

Figures 6-10 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 1-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Horimai et al. (US 6,215,758).

Horimai et al., according to Figs. 1-6 and 52, shows a tracking system comprising all features of the claimed invention.

Regarding claim 1, see Figs. 1-6 which show an optical disk including data segments, for recording data, provided in each sector in a recording track (see Fig. 4), wherein at least some of the data segments (see DSEG0-DSEG12) each include: a clock mark field (see ARs) for recording a clock mark from which a clock signal is obtained; and a synchronization field (see ARd) for recording a synchronization pattern with which displacement of the data is corrected.

Regarding claim 2, see Figs. 5A-5D which show the optical disk wherein at least some of the data segments including a synchronization field are provided at regular intervals in each sector.

Regarding claim 3, see Figs. 5A-5D which show the optical disk wherein the synchronization field has a fixed position in each of the data segments.

Regarding claim 4, see the respective disclosures of Figs. 1, 4-5D which show the optical disk wherein one of the data segments, located at a head of each sector, records a header pattern for matching the clock signal and the data in phase.

Regarding claim 5, see Fig. 5D which shows the optical disk wherein the data segments each include a pre-write field and a post-write field for offsetting displacement of the data that occurs when the data is recorded.

Regarding claim 6, see Figs. 1-6, which show an optical disk with a recording track (see Fig. 1) constituted by sectors arranged in a concentric or spiral form, in which data is rewritable sector by sector, wherein each of the sectors (see Frames) is divided into segments, each of the segments includes a data field (see DSEG(x)) for recording data and a clock field having a different light reflectance from that of the data field, and the data field includes fields for recording a synchronization pattern.

Regarding claim 7, see the respective disclosure of Figs. 1-6 which show the optical disk wherein each of the sectors includes at least one address segment (ARs) where address information is located and data segments (see ARd) for recording data, the address segment is located at a head of the sector, a first data segment immediately subsequent to the address segment includes a field for recording a phase introducing header pattern for use in data

reproduction, and the fields for recording the synchronization pattern are included at regular intervals in a second data segment immediately subsequent to the first data segment.

Regarding claim 8, see Figs. 1-4, and 52 which show an optical reproduction device for reproducing data recorded in data segments (see Fig. 1) provided in each sector in a recording track of an optical disk, the optical reproduction device comprising: a clock generation circuit (see PLL, SCK, circuit 17 in Fig. 52) for generating a clock signal from a clock mark recorded in clock mark field provided in the data segments; and a data rearrangement circuit (see circuit 14 in Fig. 52) for detecting a synchronization pattern recorded in a synchronization field provided in at least some of the data segments to correct displacement of the data according to the detected synchronization pattern.

Regarding claim 9, see Fig. 52 which show the optical reproduction device wherein the data rearrangement circuit detects (see circuit 14) the synchronization pattern in each sector of the optical disk at regular intervals.

Regarding claim 10, see Fig. 52 which shows the optical reproduction device wherein the data rearrangement circuit (see circuit 14) includes a window circuit for detecting the synchronization pattern only in proximity to the synchronization field.

Regarding claim 11, see Figs. 52 which shows an optical reproduction device further comprising: a phase adjusting circuit for matching the data and the clock signal in phase using a header pattern recorded in one of the data segments located at a head of each sector of the optical disk.

Regarding claim 12, see Figs. 1-4 and 52 which shows an optical reproduction device for reproducing data from an optical disk with a recording track constituted by sectors arranged in

concentric or spiral form, in which data is rewritable sector by sector, wherein each of the sectors is divided into segments, each of the segment includes data fields for recording data and a clock field having a different light reflectance from that of the data fields, and the data fields record synchronization patterns (see Figs. 4 and 5), the optical reproduction device comprising: clock generation means (see circuits 11, 17 in Fig. 52) for detecting a laser reflected at the clock field as a clock field signal and generating a clock for use in data reproduction according to the clock field signal; synchronization pattern detection means (see circuit 14 in Fig. 52) for detecting the synchronization pattern recorded in the data fields; reproduction means for reproducing sector by sector using the clock generated by the clock generation means and correcting displacement of data in the sector according to a result of the detection of the synchronization pattern.

Regarding claim 13, see Figs. 52 an optical reproduction device wherein the synchronization pattern only in a predetermined part in the data fields.

Regarding claim 14, see Figs. 1-6 and 52 which show an optical recording device for recording data in data segments provided in each sector in a recording track of an optical disk, the optical recording device comprising: a clock generation circuit (see circuits 11, 17 in Fig. 52) for generating a clock signal for use in recording of the data; and a synchronization pattern addition circuit (see circuit 14 in Fig. 52) for adding a synchronization pattern for correcting displacement of the data to data recorded in at least some of the data segments.

Regarding claim 15, see Figs. 1-6 and 52 which show an optical recording device wherein the synchronization pattern addition circuit adds the synchronization pattern (see circuit 14 in Fig. 52) to the data recorded in the data segments provided at regular intervals in each sector of the optical disk.

Regarding claim 16, see Figs. 1-6 and 52 which shows an optical recording device wherein the synchronization pattern addition circuit adds the synchronization pattern (see circuit 14 in Fig. 52) so that the synchronization pattern is recorded at a fixed position in each data segment.

Claim 17 is rejected under 35 U.S.C. 102(b) as being anticipated by Minoru et al. (US 6,292,451).

Regarding claim 17, see Figs. 1-8 and 27 which show an optical recording device for recording data on an optical disk with a recording track constituted by sectors arranged in a concentric or spiral form (see Fig. 1), in which data is rewritable sector by sector, wherein each of sectors is divided into segments, and each of the segment includes a data field for recording data and a clock field having a different light reflectance from that of the data field, the optical recording device comprising: clock generation means (see circuits 115) for detecting a laser reflected at the clock field as a clock field signal and generating a clock field as a clock field signal and generating a clock for use in data recording according to the clock field signal; and recording means (see circuit 120) for recording synchronization patterns, together with recording data, in each data field using the clock at a predetermined cycle.

Cited References

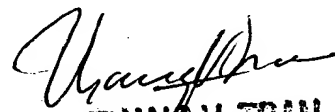
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited references relate to a data recording/reproduction method and apparatus for recording/reproducing data on an optical disk.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bach Q Vuong whose telephone number is (703) 305-7355. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (703) 305-6137. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

BV
June 2, 2003


THANG V. TRAN
PRIMARY EXAMINER



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/560,522	04/28/2000	Jun Akiyama	49794(904)	3377

21874 7590 06/05/2003

EDWARDS & ANGELL, LLP
P.O. BOX 9169
BOSTON, MA 02209

EXAMINER

VUONG, BACH Q

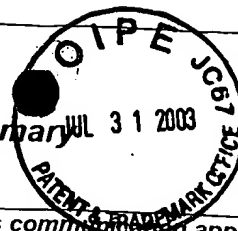
ART UNIT	PAPER NUMBER
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2653

DATE MAILED: 06/05/2003

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Office Action Summary



Application No.

09/560,522

Applicant(s)

AKIYAMA ET AL.

Examiner

Bach Q Vuong

Art Unit

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Status

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Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
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- 7) ☐ Claim(s) ____ is/are objected to.
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Application Papers

- 9) ☐ The specification is objected to by the Examiner.
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Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
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Drawings

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Claim Rejections - 35 USC § 102

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 1-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Horimai et al. (US 6,215,758).

Horimai et al., according to Figs. 1-6 and 52, shows a tracking system comprising all features of the claimed invention.

Regarding claim 1, see Figs. 1-6 which show an optical disk including data segments, for recording data, provided in each sector in a recording track (see Fig. 4), wherein at least some of the data segments (see DSEG0-DSEG12) each include: a clock mark field (see ARs) for recording a clock mark from which a clock signal is obtained; and a synchronization field (see ARd) for recording a synchronization pattern with which displacement of the data is corrected.

Regarding claim 2, see Figs. 5A-5D which show the optical disk wherein at least some of the data segments including a synchronization field are provided at regular intervals in each sector.

Regarding claim 3, see Figs. 5A-5D which show the optical disk wherein the synchronization field has a fixed position in each of the data segments.

Regarding claim 4, see the respective disclosures of Figs. 1, 4-5D which show the optical disk wherein one of the data segments, located at a head of each sector, records a header pattern for matching the clock signal and the data in phase.

Regarding claim 5, see Fig. 5D which shows the optical disk wherein the data segments each include a pre-write field and a post-write field for offsetting displacement of the data that occurs when the data is recorded.

Regarding claim 6, see Figs. 1-6, which show an optical disk with a recording track (see Fig. 1) constituted by sectors arranged in a concentric or spiral form, in which data is rewritable sector by sector, wherein each of the sectors (see Frames) is divided into segments, each of the segments includes a data field (see DSEG(x)) for recording data and a clock field having a different light reflectance from that of the data field, and the data field includes fields for recording a synchronization pattern.

Regarding claim 7, see the respective disclosure of Figs. 1-6 which show the optical disk wherein each of the sectors includes at least one address segment (ARs) where address information is located and data segments (see ARd) for recording data, the address segment is located at a head of the sector, a first data segment immediately subsequent to the address segment includes a field for recording a phase introducing header pattern for use in data

reproduction, and the fields for recording the synchronization pattern are included at regular intervals in a second data segment immediately subsequent to the first data segment.

Regarding claim 8, see Figs. 1-4, and 52 which show an optical reproduction device for reproducing data recorded in data segments (see Fig. 1) provided in each sector in a recording track of an optical disk, the optical reproduction device comprising: a clock generation circuit (see PLL, SCK, circuit 17 in Fig. 52) for generating a clock signal from a clock mark recorded in clock mark field provided in the data segments; and a data rearrangement circuit (see circuit 14 in Fig. 52) for detecting a synchronization pattern recorded in a synchronization field provided in at least some of the data segments to correct displacement of the data according to the detected synchronization pattern.

Regarding claim 9, see Fig. 52 which show the optical reproduction device wherein the data rearrangement circuit detects (see circuit 14) the synchronization pattern in each sector of the optical disk at regular intervals.

Regarding claim 10, see Fig. 52 which shows the optical reproduction device wherein the data rearrangement circuit (see circuit 14) includes a window circuit for detecting the synchronization pattern only in proximity to the synchronization field.

Regarding claim 11, see Figs. 52 which shows an optical reproduction device further comprising: a phase adjusting circuit for matching the data and the clock signal in phase using a header pattern recorded in one of the data segments located at a head of each sector of the optical disk.

Regarding claim 12, see Figs. 1-4 and 52 which shows an optical reproduction device for reproducing data from an optical disk with a recording track constituted by sectors arranged in

concentric or spiral form, in which data is rewritable sector by sector, wherein each of the sectors is divided into segments, each of the segment includes data fields for recording data and a clock field having a different light reflectance from that of the data fields, and the data fields record synchronization patterns (see Figs. 4 and 5), the optical reproduction device comprising: clock generation means (see circuits 11, 17 in Fig. 52) for detecting a laser reflected at the clock field as a clock field signal and generating a clock for use in data reproduction according to the clock field signal; synchronization pattern detection means (see circuit 14 in Fig. 52) for detecting the synchronization pattern recorded in the data fields; reproduction means for reproducing sector by sector using the clock generated by the clock generation means and correcting displacement of data in the sector according to a result of the detection of the synchronization pattern.

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Regarding claim 14, see Figs. 1-6 and 52 which show an optical recording device for recording data in data segments provided in each sector in a recording track of an optical disk, the optical recording device comprising: a clock generation circuit (see circuits 11, 17 in Fig. 52) for generating a clock signal for use in recording of the data; and a synchronization pattern addition circuit (see circuit 14 in Fig. 52) for adding a synchronization pattern for correcting displacement of the data to data recorded in at least some of the data segments.

Regarding claim 15, see Figs. 1-6 and 52 which show an optical recording device wherein the synchronization pattern addition circuit adds the synchronization pattern (see circuit 14 in Fig. 52) to the data recorded in the data segments provided at regular intervals in each sector of the optical disk.

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Regarding claim 17, see Figs. 1-8 and 27 which show an optical recording device for recording data on an optical disk with a recording track constituted by sectors arranged in a concentric or spiral form (see Fig. 1), in which data is rewritable sector by sector, wherein each of sectors is divided into segments, and each of the segment includes a data field for recording data and a clock field having a different light reflectance from that of the data field, the optical recording device comprising: clock generation means (see circuits 115) for detecting a laser reflected at the clock field as a clock field signal and generating a clock field as a clock field signal and generating a clock for use in data recording according to the clock field signal; and recording means (see circuit 120) for recording synchronization patterns, together with recording data, in each data field using the clock at a predetermined cycle.

Cited References

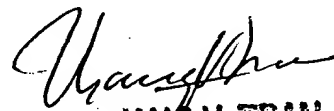
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PRIMARY EXAMINER



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FORM PTO-1449

INFORMATION DISCLOSURE
STATEMENT

DOCKET NO:

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SERIAL NO.:

09/560,522

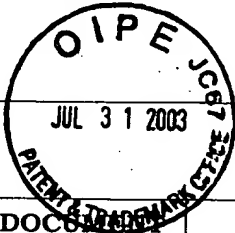
APPLICANT(S): J. Akiyama, et al.

FILING DATE:

April 28, 2000

GROUP NO.:

2753



UNITED STATES PATENT DOCUMENTS

EXAM. INITIALS		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
BV	AA	5,132,954	7/21/1992	J. Kulakowski, et al.	369	48	
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		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES/NO
	BA						
	BB						
	BC						
	BD						
	BE						
	BF						

OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

CA Correspondence from German Patent Office of March 2, 2001 in corresponding German Application No. 100 20 462.7-53 and English translation.

EXAMINER:

Bach Vuong

DATE:

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Notice of References Cited

Application/Control No.
09/560,522

Applicant(s)/Patent Under
Reexamination
AKIYAMA ET AL.

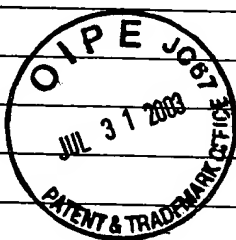
Examiner
Bach Q Vuong

Art Unit
2653

Page 1 of 1

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B	US-5,978,350	11-1999	Tobita et al.	369/275.1
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NON-PATENT DOCUMENTS

* U	Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

U.S. Patent and Trademark Office
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